

TECHNICAL REVIEW AND EVALUATION
OF
AIR QUALITY PERMIT # 45554
United Metro Materials, Inc.

I. INTRODUCTION

This air quality control renewal permit is for the operation of a concrete batch plant (CBP) with or without a collocated crushing and screening (C&S) plant. This is a portable facility and will be operated statewide. This is a renewal of Air Quality Permit No. 1001733.

A. Company Information

1. Mailing Address: United Metro Materials, Inc.
P. O. Box 52140
Phoenix, AZ 85140
2. Facility Address: United Metro Materials, Inc.-Avra Plant 227
1010 West Avra Valley Road
Tucson, AZ 85745

II. FACILITY DESCRIPTION

A. Process Description

Concrete is composed essentially of water, cement, sand (fine aggregate), and coarse aggregate. Coarse aggregate may consist of gravel or crushed stone. Concrete batching plants store, convey, measure, and discharge these constituents into trucks for transport to a job site.

The aggregate material is delivered by front-end loader and/or conveyor to the concrete batch plant. The cement is transferred to elevated storage silos pneumatically. The sand and coarse aggregate are transferred to elevated bins by front-end loader and belt conveyor. From these elevated bins, the constituents are fed by gravity or conveyor to weigh hoppers, which combine the proper amount of each material. Sand, aggregate, cement, and water are all gravity fed from the weigh hopper into mixer trucks. The concrete is mixed on the way to the site where the concrete is to be poured.

B. Air Pollution Control Equipment

Particulate matter (PM₁₀), consisting primarily of cement dust but including some aggregate and sand dust emissions, is the primary pollutant of concern. All but one of the emission points are fugitive in nature. The only point source is the transfer of cement to the silo, and this is usually vented to a fabric filter or “sock” system located in a bin vent or bag house. Fugitive sources

include the transfer of sand and aggregate, truck loading, mixer loading, vehicle traffic, and wind erosion from sand and aggregate storage piles. The amount of fugitive emissions generated during the transfer of sand and aggregate depends primarily on the surface moisture content of these materials.

Types of controls used may include water sprays, enclosures, hoods, curtains, shrouds, movable and telescoping chutes, and the like. The movement of heavy trucks over unpaved or dusty surfaces in and around the plant is controlled by good maintenance, wetting of the road surface with water and/or the use of dust suppressants.

III. LEARNING SITES IN VICINITY

In accordance with ADEQ's Environmental Permits and Approvals Near Learning Sites Policy, the Department conducted an evaluation to determine if any nearby learning sites would be adversely impacted by the facility. Learning sites consist of all existing public schools, charter schools and private schools the K-12 level, and all planned sites for schools approved by the Arizona School Facilities Board. The learning sites policy was established to ensure that the protection of children at learning sites is considered before a permit approval is issued by ADEQ.

The Department did not identify any learning sites within a two mile radius of the United Metro Materials, Inc. – Avra Plant 227, located at 1010 West Avra Valley Rd., Tucson, AZ 85745.

IV. COMPLIANCE HISTORY

There are two air quality cases associated with this facility, which were initiated in June and August 2003, respectively. There have been four facility inspections and two technical report reviews with two facility inspections resulting in the below described air quality cases.

A. Case Number 25650

A Notice of Opportunity to Correct was issued on June 5, 2003, for one permit violation found during an inspection of the facility on June 3, 2003 (Inspection ID 37007). The dual use cement and fly ash silo did not have a permit number or an equipment identification number as listed in Attachment "F", Equipment List of Air Quality Control Permit No. 1001733. Also a copy of Air Quality Control Permit No. 1001733 was not maintained on site.

ADEQ staff received appropriate documentation to achieve compliance and the Notice of Opportunity to Correct was closed on December 2, 2003.

B. Case Number 27057

A Notice of Opportunity to Correct was issued on August 28, 2003, for one permit violation found during an inspection of the facility on August 11, 2003 (Inspection ID 39856). A copy of Air Quality Control Permit No. 1001733 was not maintained on site.

ADEQ staff received appropriate documentation to achieve compliance and the Notice of Opportunity to Correct was closed on November 7, 2003.

V. POTENTIAL-TO-EMIT AND SYNTHETIC MINOR LIMITATIONS

A. Statewide Operation (outside Maricopa County)

The facility has the equipment capacity to produce 360 tons per hour of concrete and crushed material. The facility may also have a crushing and screening plant capable of emitting 13.64 tons per year of PM₁₀ which it may collocate on site periodically.

B. Operating in Maricopa County

The facility has a potential to emit 291.73 pounds per day and 60.90 tons per year of PM. However, the source has voluntarily accepted hourly limitations to stay within the Maricopa County BACT threshold. The facility has voluntarily accepted hourly limitations of 13 hours per day and 4,171 hours per year. The facility has also accepted the voluntarily restriction not to collocate with the crushing & screening facility while operating within Maricopa County.

Pollutant	Inside Maricopa County Emissions (tpy)	Outside Maricopa County Emissions (tpy)
PM ₁₀	12.57	26.19
PM	47.26	60.90
SO ₂	4.04	4.04
NO _x	0.57	0.57
VOC	0.00	0.00
CO	0.14	0.14

*The Outside Maricopa County PM & PM₁₀ Emissions include 13.64 tons/yr emissions from the collocated Crushing/Screening Plant

VI. APPLICABLE REGULATIONS

The Permittee has identified the applicable regulations that apply to each unit in its permit application. The following table summarizes the findings of the Department with respect to the regulations that are applicable to each emissions unit. Previous permit conditions are discussed under Section VII of this technical review document.

Applicable Regulations

Unit ID	Year of Manufacture	Control Equipment	Applicable Regulations	Verification
Concrete Batch Plant	1986	Emissions from silos are controlled by baghouses. Fugitive sources controlled by water spray and other reasonable precautions. Emissions from silos are controlled by baghouses. Fugitive sources controlled by water spray and other reasonable precautions.	<u>A.A.C.</u> R18-2-604.A R18-2-604.B R18-2-605.A R18-2-605.B R18-2-606 R18-2-607.A R18-2-607.B R18-2-614 R18-2-702.B R18-2-723	Standards of performance for concrete batch plants and Fugitive dust sources.
			<u>Maricopa County Rule</u> Rule 300 Rule 316 Rule 320	Maricopa County Rule 300-Visible Emissions describe standards for visible emissions and opacity. Maricopa County Rule 316-Nonmetallic Mineral Processing establishes limits for the emissions of particulate matter into the ambient air from any nonmetallic mining operating or rock product processing plant. Maricopa County Rule 320-Odors and Gaseous Air Contaminants establish limits for the emissions of odors and other gaseous air contaminants into the atmosphere.

Unit ID	Year of Manufacture	Control Equipment	Applicable Regulations	Verification
Concrete Batch Plant	1986	Emissions from silos are controlled by baghouses. Fugitive sources controlled by water spray and other reasonable precautions. Emissions from silos are controlled by baghouses. Fugitive sources controlled by water spray and other reasonable precautions.	<u>Pima County Code</u> §§17.16.040 §§17.16.050 §§17.16.380	Standards and applicability for opacity limitations. Standards of performance for concrete batch plants.
			<u>Pinal Code</u> §5-5	Stationary source performance standards-Gravel or crushed stone processing plants.
Boilers	2004	N/A	<u>A.A.C.</u> R18-2-2-724	Standards of performance for fossil-fuel fired industrial and commercial equipment. This section is applicable to equipment which is less than 250 MMBtu and greater than 0.5 MMBtu.
			<u>Pima County Code</u> §§17.16.165.C.1 §§17.16.165.E §§17.16.165.G §§17.16.165.J	The boilers are subject to Pima County Codes §§17.16.165C.1, E, G and J. They were however streamlined because A.A.C. R18-2-724 regulations are just stringent.
			<u>Pinal Code</u> §5-21-930	The boilers are subject to Pinal County Code §5.21.930. They were however streamlined because A.A.C. R18-2-724 regulations are just stringent.

Unit ID	Year of Manufacture	Control Equipment	Applicable Regulations	Verification
Fugitive Dust Sources	N/A	Water and other reasonable precautions	<u>A.A.C.</u> R18-2-2-702 Article 6	These standards are applicable to all fugitive dust sources.
			<u>Maricopa County Rule</u> Rule 300	Maricopa County Rule 300-Visible Emissions describe standards for visible emissions and opacity.
			Rule 316	Maricopa County Rule 316-Nonmetallic Mineral Processing establishes limits for the emissions of particulate matter into the ambient air from any nonmetallic mining operating or rock product processing plant.
			<u>Pima County Code</u> §§17.16.060	Fugitive dust producing activities.
			§§17.16.080 §§17.16.090 §§17.16.100	Vacant lots and open spaces. Roads and Streets Particulate material
			<u>Pinal Code</u> §4-2	Emissions from existing new non-point sources-Fugitive dust.

Unit ID	Year of Manufacture	Control Equipment	Applicable Regulations	Verification
Mobile Sources	N/A	Water Sprays/Water Truck for dust control	<u>A.A.C.</u> Article 8	This Article is applicable to off-road mobile sources, which either move while emitting air pollutants or are frequently moved during the course of their utilization.
			<u>M.C.R.</u> Rule 200§410	Maricopa County Rule 200§410 was included in the Mobile Sources Section covering Article 8 to streamline the document since the conditions are identical.
			<u>Pima County Code</u> §§17.12.300	The facility is also subject to Pima County Code §§17.12.300 but the regulations were streamlined because Article 8 of the A.A.C. is just as stringent.
Spray Painting Operations	N/A	N/A	<u>A.A.C.</u> R18-2-727	This standard is applicable to any spray-painting operation.
			<u>M.C.R.</u> Rule 315	Maricopa County Rule 315 establishes a limit for the emission of particulate matter to the atmosphere from spray coating operations.
Demolition/ Renovation Operations	N/A	N/A	<u>A.A.C.</u> R18-2-1101.A.8	This standard is applicable to any asbestos related demolition or renovation operations.
Abrasive Blasting	N/A	N/A	<u>A.A.C.</u> R18-2-726 R18-2-702.B	This standard is applicable to any activity related to abrasive blasting operations.
			<u>M.C.R.</u> Rule 312§410	Maricopa County Rule 312§410 establishes limits for particulate emissions from abrasive blasting operations.
			<u>Pinal Code</u> §5-4-140	The facility is also subject to Pinal County Code §5.4.140 but the regulations were streamlined because A.A.C. R18-2-726 and A.A.C R18-2-702.B are just as stringent.

VII. PREVIOUS PERMIT CONDITIONS

A. Previous Permits

The following table lists the previous permits that have been issued to United Metro Materials, Inc.

Previous Permits

Date Permit Issued	Permit #	Application Basis
09/23/02	1001733	Operating Permit

B. Previous Permit Conditions

The following are discussions on the previous permits that have been issued to the source.

CLASS II, NON-TITLE V OPERATING PERMIT NO. 1001733

This operating permit was issued to United Metro Materials, Inc. on March 20, 2003, to operate a concrete batch plant with or without a collocated crushing and screening plant.

OP #1001733, References	Determination				Comments
	Revise	Keep	Delete	Stream-line	
Att. A.	X				General provisions - revised to represent most recent language
Att.B.I			X		Relationship of permit to applicable state implementation plan. Language is not necessary because this is a renewal permit.
Att B.II.A		X			Facility Wide Limitations-Operating Limitations
Att B.II.B		X			Facility Wide Limitations-Record Keeping Requirements
Att B.II.C		X			Facility Wide Limitations-Reporting Requirements
Att B.III.A		X			Concrete Batch Plant-Emission Standards-revised to represent most recent language.
Att B.III.B		X			Concrete Batch Plant-Air Pollution Control Requirements-revised to represent most recent language. Meets material permit conditions as defined by A.A.C. R18-2-306.A.2 and - 331.A.3.d.

OP #1001733, References	Determination				Comments
	Revise	Keep	Delete	Stream-line	
Att B.III.C		X			Concrete Batch Plant-Monitoring Requirement-revised to represent most recent language. Meets requirement A.A.C. R18-2-306.A.3.c.
Att B.III.D		X			Concrete Batch Plant-Record Keeping Requirement-revised to represent most recent language. Meets requirement A.A.C. R18-2-306.A.3.c
Att B.IV		X			Conditions Specific to Portable Sources-Section and language is retained.
Att C		X			Conditions for Operation Inside Pima County-Section and language are retained.
Att D		X			Conditions for Operation Inside Pinal County-Section and language are retained.
Att E		X			Conditions for Operation Inside Maricopa County-Section and language are retained.
Att F		X			Equipment List-the equipment has not changed since the last permit list provided.

VIII. MONITORING REQUIREMENTS

A. Opacity

1. The Permittee is required to conduct a monthly survey of visible emissions emanating from the concrete batch plant equipment at the facility. If the opacity of the emissions observed appears to exceed the opacity limit, the observer shall conduct a certified EPA Reference Method 9 observation. The Permittee is required to keep records of the initial survey and any EPA Reference Method 9 observations performed. If the observation results in an exceedance of the opacity limit, the Permittee is required to take corrective action and log all such actions. Any exceedance must be reported to ADEQ as an “excess emission”.
2. The Permittee is required to conduct a quarterly EPA Reference Method 9 observation of emissions emanating from the concrete batch plant. The Permittee is required keep a record the results of the observation. If the observation results in an exceedance of the opacity limit, the Permittee is required to take corrective action and log all such actions. Any exceedance must be reported to ADEQ as an “excess emission”.
3. The Permittee is required to maintain records of the dates on which any of the activities listed in Conditions III.B.1.c.i through III.B.1.c.viii of Attachment “B” of Permit 45554 were performed and the control measures that were adopted.
4. The Permittee is required to conduct a monthly survey of visible emissions emanating from the stack of the water heater. If the opacity of the emissions observed appears to exceed the opacity limit, the observer shall conduct a certified EPA Reference Method 9 observation. The Permittee is required to keep records of the initial survey and any EPA Reference Method 9 observations performed. If the observation results in an exceedance

of the opacity limit, the Permittee is required to take corrective action and log all such actions. Any exceedance must be reported to ADEQ as an “excess emission”.

B. Sulfur Dioxide

The Permittee shall keep records of fuel supplier certifications to demonstrate compliance with the sulfur content limit specified in the Condition VII.E.1.a. The certification shall contain the information with regard to sulfur content and the method used to determine the sulfur content of fuel. These records shall be made available to the ADEQ inspector upon request.

E. LIST OF ABBREVIATIONS

A.A.C.....	Arizona Administrative Code
ADEQ.....	Arizona Department of Environmental Quality
CO	Carbon Monoxide
ft.....	Feet
hr.....	Hour
lb.....	Pound
MCR	Maricopa County Rule
NO _x	Nitrogen Oxide
P.C.C.	Pima County Code
PM	Particulate Matter
PM ₁₀	Particulate Matter Nominally less than 10 Micrometers
PTE.....	Potential-to-Emit
SO ₂	Sulfur Dioxide
TPY	Tons per Year
VOC.....	Volatile Organic Compound
yr.....	Year